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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,308	01/11/2002	Nawalage Florence Cooray	020026	4405

23850 7590 06/25/2003

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EXAMINER

XU, LING X

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 06/25/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/042,308

Applicant(s)

COORAY, NAWALAGE
FLORENCE

Examiner

Ling X. Xu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-17, 19 is/are allowed.
- 6) ☒ Claim(s) 1-8 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Das et al (US 5,912,308).

With respect to claims 1 and 5, Das discloses a composition obtained from an epoxy resin and cyanate ester and metal catalyst (Abstract and Col. 8, lines 25-36). The ratio of the epoxy functional group to the cyanate groups is about 1:1 when there are two cyanate groups in the cyanate ester (Col. 2, lines 1-30) and two epoxy functional groups in the epoxy resin (Cols. 5-7).

With respect to claims 2-3, Das discloses the epoxy resin comprises two or more benzene rings and two or more epoxy groups in the molecules (Cols. 5-7).

With respect to claim 4, Das discloses the cyanate ester has at least two cyanate groups in the molecule since the molecule is a polymer with n is greater than 1 (Col. 2, lines 1-40).

With respect to claim 6, Das discloses the use of metal catalyst such as an acetylacetonate of Cu, Zn, Co (Col. 8, lines 20-35). Das also discloses the amount of

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catalyst is from about 0.01 to 0.2% (Col. 8, lines 13-21), which includes the claimed range of 0.01-0.05%.

With respect to claim 7, since Das discloses the same composition as claimed, the same composition would also have the same properties such as can be heat cured in 1 to 2 hours at 150-200 degree.

With respect to claim 18, Das discloses the composition has low dielectric constant (Col. 14, lines 55-67) and is a dielectric material. Das also discloses that the composition is suitable for making laminates or coatings (Abstract) and can be used in printed circuit boards (Col. 10, lines 40-50).

Das meets all the limitations of claims 1-7 and 18.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Das et al., as applied to claim 1 above, and further in view of Shiratsuchi et al. (US 5,856,379).

As stated above, Das discloses a composition obtained from an epoxy resin and cyanate ester and metal catalyst (Abstract and Col. 8, lines 25-36).

Das does not disclose the resin composition further comprises a colloidal silica.

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Shiratsuchi teaches colloidal silica is widely used as a sedimentation inhibitor in the systems containing fillers or a thickener or a thixotropic agent of liquid resins in order to increasing the toughness and /or impact resistance of materials, increasing the heat strain temperature of materials and increasing the mechanical decay of materials (Col. 1, lines 15-25).

Therefore, it would have been obvious to one of ordinary skill in the art to add colloidal silica in the resin liquid composition of Das in order to increasing the toughness and /or impact resistance of the composition materials, increasing the heat strain temperature of the materials and increasing the mechanical decay of the materials.

Allowable Subject Matter

3. Claims 9-17 and 19 are allowed.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling X. Xu whose telephone number is 703-305-0395. The examiner can normally be reached on 8:00 - 4:30 Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah D. Jones can be reached on 703-308-3822. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Ling X. Xu
Examiner
Art Unit 1775

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LX

June 24, 2003


DEBORAH JONES
SUPERVISORY PATENT EXAMINER